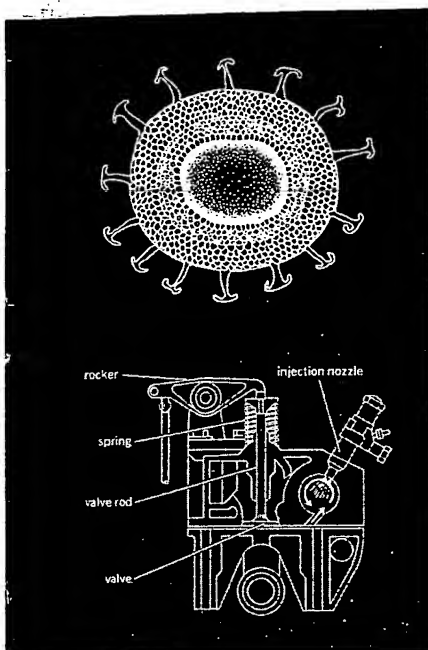


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# **Dictionary of Scientific and Technical Terms**



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have similar chemical properties and crystalline forms usually have similar chemical formulas.

**Mittag-Leffler's theorem** [MATH] A theorem that enables one to explicitly write down a formula for a meromorphic complex function with given poles.

**mittelschmerz** [MED] Pain or discomfort in the lower abdomen in women occurring midway in the intermenstrual interval; thought to be secondary to the irritation of the pelvic peritoneum by fluid or blood escaping from the point of ovulation in the ovary.

**mix crystal** See mixed crystal.

**mixed acid** See nitrating acid.

**mixed aphasia** [PSYCH] A combination of two or more forms of aphasia with impairment or loss of language function.

**mixed arthritis** [MED] A combination of features of rheumatoid arthritis and degenerative joint disease seen in the same patient or the same joint.

**mixed-based notation** [MATH] A computer number system in which a single base, such as 10 in the decimal system, is replaced by two number bases used alternately, such as 2 and 5.

**mixed-base number** [MATH] A number in mixed-base notation. Also known as mixed-radix number.

**mixed cloud** [METEOROL] A cloud containing both water drops and ice crystals, hence a cloud whose composition is intermediate between that of a water cloud and that of an ice-crystal cloud.

**mixed cryoglobulin** [BIOCHEM] A cryoglobulin with a monoclonal component made of immunoglobulin belonging to two different classes, one of which is monoclonal.

**mixed crystal** [CRYSTAL] A crystal whose lattice sites are occupied at random by different ions or molecules of two different compounds. Also known as mix crystal.

**mixed current** [OCEANOGR] A type of tidal current characterized by a conspicuous difference in speed between the two flood currents or two ebb currents usually occurring each tidal day.

**mixed cycle** [MECH ENG] An internal combustion engine cycle which combines the Otto cycle constant-volume combustion and the Diesel cycle constant-pressure combustion in high-speed compression-ignition engines. Also known as combination cycle; commercial Diesel cycle; limited-pressure cycle.

**mixed decimal** [MATH] Any decimal plus an integer.

**mixed flow** [CHEM ENG] Flow stream existing in two or more phases, such as gas, hydrocarbon, and water. Also known as mixed-phase flow.

**mixed-flow fan** [MIN ENG] A mine fan in which the flow is both radial and axial.

**mixed-flow impeller** [MECH ENG] An impeller for a pump or compressor which combines radial- and axial-flow principles.

**mixed forest** [FOR] A forest consisting of two or more types of trees, with no more than 80% of the most common tree.

**mixed gland** [PHYSIO] A gland that secretes more than one substance, especially a gland containing both mucous and serous components.

**mixed highs** [COMMUN] In color television, a method of reproducing very fine picture detail by transmitting high-frequency components as part of luminance signals for achromatic reproduction in color pictures.

**mixed indicator** [ANALY CHEM] Color-change indicator for acid-base titration end points in which a mixture of two indicator substances is used to give sharper end-point color changes.

**mixed laterality** [PSYCH] The tendency, when there is a choice, to prefer to use parts of one side of the body for certain tasks and parts of the opposite side for others.

**mixed layer** [OCEANOGR] The layer of water which is mixed through wave action or thermohaline convection. Also known as surface water.

**mixed-layer mineral** [MINERAL] A mineral having an interstratified structure consisting of alternating layers of two different clays or of a clay and some other mineral.

**mixed nerve** [PHYSIO] A nerve containing both sensory and motor components.

**mixed nucleus** [METEOROL] A condensation nucleus of intermediate efficacy which, as a result of particle coagulation,

contains both soluble hygroscopic matter and insoluble but wettable matter.

**mixed number** [MATH] The sum of an integer and a fraction.

**mixed oil** See nitrating acid.

**mixed ore** [GEOL] Any ore with both oxidized and unoxidized minerals.

**mixed-phase flow** See mixed flow.

**mixed radix** [MATH] Pertaining to a numeration system using more than one radix, such as the binary system.

**mixed-radix number** See mixed-base number.

**mixed reflection** See spread reflection.

**mixed salvo** [ORD] Series of shots in which some fall short of the target and some beyond it.

**mixed tide** [OCEANOGR] A tide in which the presence of a diurnal wave is conspicuous by a large inequality in the heights of either the two high tides or the two low tides usually occurring each tidal day.

**mixer** [ELECTR] 1. A device having two or more inputs, usually adjustable, and a common output; used to combine separate audio or video signals linearly in desired proportions to produce an output signal. 2. The stage in a superheterodyne receiver in which the incoming modulated radio-frequency signal is combined with the signal of a local r-f oscillator to produce a modulated intermediate-frequency signal. Also known as first detector; heterodyne modulator; mixer-first detector. [OPTICS] A nonlinear device in which two light beams are combined to form new beams having frequencies equal to the sum or the difference of the input wavelengths.

**mixer-first detector** See mixer.

**mixer-settler** [CHEM ENG] Solvent-extraction system with alternating or combined arrangement of mixers and settlers; used for chemicals extraction, lubricating-oil refining, and uranium oxide recovery. Also known as mixer-settler extractor.

**mixer-settler extractor** See mixer-settler.

**mixer tube** [ELECTR] A multigrid electron tube, used in a superheterodyne receiver, in which control voltages of different frequencies are impressed upon different control grids, and the nonlinear properties of the tube cause the generation of new frequencies equal to the sum and difference of the impressed frequencies.

**mixing** [CHEM ENG] The intermingling of different materials (liquid, gas, solid) to produce a homogeneous mixture. [ELECTR] Combining two or more signals, such as the outputs of several microphones. [SCI TECH] The thorough intermingling of two or more different materials.

**mixing chamber** [ENG] The space in a welding torch in which the gases are mixed.

**mixing length** [PHYS] A mean length of travel, characteristic of a particular motion, over which an eddy maintains its identity; it is analogous to the mean free path of a molecule; physically, the idea implies that mixing occurs by discontinuous steps, that fluctuations which arise as eddies with different characteristics wander about, and that the mixing is done almost entirely by the small eddies.

**mixing ratio** [METEOROL] In a system of moist air, the dimensionless ratio of the mass of water vapor to the mass of dry air; for many purposes, the mixing ratio may be approximated by the specific humidity.

**mixing transformation** [MATH] A function of a measure space which moves the measurable sets in such a manner that, asymptotically as regards measure, any measurable set is distributed uniformly throughout the space.

**mixing valve** [ENG] Multi-inlet valve used to mix two or more fluid intakes to give a mixed product of desired composition.

**mixite** [MINERAL]  $\text{Cu}_{11}\text{Bi}(\text{AsO}_4)_5(\text{OH})_{10} \cdot 6\text{H}_2\text{O}$  A green to whitish mineral composed of a hydrous basic arsenate of copper and bismuth.

**Mixodectidae** [PALEON] A family of extinct insectivores assigned to the Proteutheria; a superficially rodentlike group confined to the Paleocene of North America.

**mixolimnion** [HYD] The upper layer of a meromictic lake, characterized by low density and free circulation; this layer is mixed by the wind.

**mixotrophic** [BIOL] Obtaining nutrition by combining autotrophic and heterotrophic mechanisms.

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